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(57) Abstract

Improved homogeneous diagnostic assay methods and labels for detecting an analyte in a medium when the analyte is a member of a specific binding pair. The methods and labels provide procedures for reducing background and increasing sensitivity. The binding partner of the analyte is labeled with a substance, the stability of which detectably changes whenever said analyte is bound as a member of the specific binding pair. In a closely related system, the analyte is labeled with a substance susceptible to differential degradation depending on whether or not the analyte is bound as a member of its specific binding pair. After incubation and selective degradation or chemical or biochemical alteration, the amount of analyte bound is detected by measuring either the stability change or the extent or degradation of the label. In a particular system, chemiluminescent acridinium ester labeled probes are used in a homogeneous hybridization assay format for sensitively detecting the presence of complementary target polynucleotide sequences.